

PTO 09-0206

CC=JP

DATE=20020219

KIND=A

PN=200253703

POLYCHLOROPRENE LATEX COMPOSITION,

MANUFACTURING METHOD THEREOF AND

ADHESIVE AGENT COMPOSITION

USING SAID LATEX COMPOSITION

[Porikuroropuren Ratekkusu Soseibutsu oyobi sono Seizou

Houhou, Sore o Mochiita Secchakuzai Soseibutsu]

Hiroyuki Yashima and Mizuo Yamaguchi

PUBLICATION COUNTRY	(10): Japan
DOCUMENT NUMBER	(11): 200253703
DOCUMENT KIND	(12): A
PUBLICATION DATE	(43): 20020219
APPLICATION NUMBER	(21): 2000239488 (P2000239488)
APPLICATION DATE	(22): 20000808
INTERNATIONAL CLASSIFICATION	(51): CO8L 11/02 CO8F 2/22 236/18 CO9J 111/02 129/04
INVENTOR(S)	(72): Hiroyuki Yashima and Mizuo Yamaguchi
APPLICANT(S)	(71): Denki Kagaku Kogyo Kabushiki Kaisha
TITLE	(54): POLYCHLOROPRENE LATEX COMPOSITION, MANUFACTURING METHOD THEREOF AND ADHESIVE AGENT COMPOSITION USING SAID LATEX COMPOSITION
FOREIGN TITLE	(54A): Porikuroropuren Ratekkusu Soseibutsu oyobi sono Seizou Houhou, Sore o Mochiita Secchakuzai Soseibutsu

[Scope of Patent Claims]

[Claim 1]

A polychloroprene latex composition having a gel fraction of 10-70 mass% and a pH of 6-9, the composition obtained by polymerizing 100 mass parts of chloroprene and more than 0 and less than 2 mass parts of ethylenically unsaturated carboxylic acid in the presence of 0.5-10 mass parts of polyvinyl alcohol, and adding a pH modifier and a radical scavenger.

[Claim 2]

A polychloroprene latex composition as in Claim 1, wherein the degree of saponification of the polyvinyl alcohol is 75-85 mol%.

[Claim 3]

A polychloroprene latex composition as in Claim 1 or 3 wherein the pH modifier is a salt of a weak acid.

[Claim 4]

An adhesive agent composition obtained by adding a tackifying resin and a metal oxide to the polychloroprene

latex composition in any of Claims 1-3.

[Claim 5]

An adhesive agent composition as in Claim 4, wherein the metal oxide is zinc oxide.

[Detailed Description of the Invention]

[0001]

[Field of the Invention]

The present invention relates to polychloroprene latex compositions effective as adhesive agents, to manufacturing methods thereof and to adhesive agents using the latex compositions. More specifically, the present invention relates to a polychloroprene latex composition, a manufacturing method thereof, and an adhesive agent composition using the latex composition, wherein the adhesive agent composition is effective as a water-based contact-type adhesive agent that has excellent adhesive performance in initial adhesive force, conditional adhesive force and adhesive water resistance and that has good latex storage stability.

[0002]

[Prior Art]

Conventionally, adhesive agents using polychloroprene as a base were predominantly solvent types. However, demand for elimination of solvents has been increasing in recent years because of problems with organic solvents such as sanitation, fire risk and environmental pollution when manufacturing or using solvent-type adhesive agents.

[0003] As techniques for eliminating solvent, methods for substituting solvent-type adhesive agents by latex adhesive agents are thought to be effective, and investigation into latex adhesive agents using various polymers is flourishing.

[0004] In particular, after a polychloroprene latex adhesive agent is applied on both adherends to be bonded and the glue line is dried, high adhesive force is expressed immediately after the adherends are stuck together. Because of this characteristic, polychloroprene latex adhesive agents are expected to be used for water-based

contact-type adhesion. However, their adhesive performance, such as initial adhesive force and water resistance, is inferior to that of solvent-type adhesive agents, and it has become a task to improve them.

[0005] For example, methods for manufacturing a polychloroprene latex adhesive agent by polymerizing chloroprene in the presence of an unsaturated carboxylic acid, a polyvinyl alcohol and a chain transfer agent are described in Japanese Kokai 50-22084 and 06-287360, but the storage stability and adhesive water resistance of this kind of polychloroprene latex is insufficient.

[0006]

[Problem to be Solved]

The present invention, in order to solve such problems in the prior art, provides a polychloroprene latex composition, a manufacturing method thereof, and an adhesive agent composition using the latex composition, which is used for a water-based adhesive agent having favorable storage stability and excellent initial adhesive force, conditional

adhesive force and water resistance.

[0007]

[Means for Solving the Problem]

As a result of diligent study in order to solve the above-mentioned problems, the present inventors discovered that by polymerizing chloroprene and a set amount of ethylenically unsaturated carboxylic acid in the presence of a polyvinyl alcohol, and by adding a pH modifier and a radical scavenger, a polychloroprene latex composition having excellent storage stability and adhesive water resistance could be obtained, and the present invention was perfected.

[0008] That is, the present invention is a polychloroprene latex composition, a manufacturing method thereof, and an adhesive composition using the polychloroprene latex composition, which is obtained by polymerizing 100 mass parts of chloroprene and more than 0 mass parts and less than 2 mass parts of ethylenically unsaturated carboxylic acid in the presence of 0.5-10 mass parts of polyvinyl alcohol, and subsequently adding a pH

modifier and a radical scavenger, the obtained chloroprene polymer having a gel fraction of 10-70 mass%.

[0009] The present invention will be described in detail below. The chloroprene polymer of the present invention is a copolymer of 2-chloro-1,3-butadiene (written hereafter as chloroprene) and an ethylenically unsaturated carboxylic acid homopolymer, or it is a copolymer obtained by additionally copolymerizing chloroprene and 1 or more types of copolymerizable monomer.

[0010] 2,3-dichloro-1,3-butadiene, 1-chloro-1,3-butadiene, isoprene, styrene, acrylonitrile, esters of acrylic acid, esters of methacrylic acid, and the like can be considered as monomers copolymerizable with the chloroprene of the present invention, and 2 or more of these can be used as needed.

[0011] As specific examples of ethylenically unsaturated carboxylic acids of the present invention, acrylic acid, methacrylic acid, crotonic acid, fumaric acid, maleic acid, citraconic acid and glutaconic acid can be

considered and can be used individually or in combinations of 2 or more. In addition, in the present invention, it is preferable to use acrylic acid or methacrylic acid, especially methacrylic acid.

[0012] Furthermore, the addition amount of ethylenically unsaturated carboxylic acid in the present invention is more than 0 and less than 2 mass parts with respect to 100 mass parts of chloroprene. Preferably, it is 0.7-1.5 mass parts. When the addition amount of ethylenically unsaturated carboxylic acid

/2

is 0 mass parts, stability of the latex is inferior, making manufacturing difficult, and adhesiveness and especially heat resistance are inferior. When the addition amount of ethylenically unsaturated carboxylic acid added is 2 mass parts or more, there is much deterioration of water resistance.

[0013] Although there is no particular limitation on which polyvinyl alcohol is used in the present invention, one

having a degree of saponification in the range of 60-98 mol% is preferable. A saponification degree of 75-95 mol% is more preferable, and a degree of saponification of 75-85 mol% is especially preferable. Also, the degree of polymerization of polyvinyl alcohol is preferably in the range of 200-3000. A degree of polymerization of 200-700 is more preferable, and a degree of polymerization of 200-700 is especially preferable. When the polymerization of polyvinyl alcohol is in this range, polymerization can be performed stably, and a high-density latex having excellent stability can be obtained.

[0014] The amount of polyvinyl alcohol added in the present invention is preferably 0.5-10 mass parts with respect to 100 mass parts of chloroprene. 2-5 mass parts is more preferable, and 2.5-4.5 mass parts is especially preferable. When the amount of polyvinyl alcohol added is less than 0.5 mass parts, emulsification performance is insufficient, and frequent generation of agglomerates easily occurs. In addition, if 10 mass parts is exceeded, in some cases thickening occurs during the polymerization reaction,

stirring is inhibited, and abnormal heat generation occurs, and consequently manufacturing becomes difficult.

[0015] Furthermore, the content rate of toluene-insoluble gel in the polychloroprene latex composition of the present invention must be within the range of 10-70 mass%, preferably within the range of 15-60 mass%. When the gel fraction is less than 10 mass%, adhesive force, heat resistance and shear strength deteriorate. Also, when the gel fraction exceeds 70 mass%, initial adhesiveness deteriorates and water resistance deteriorates considerably.

[0016] The gel fraction of polychloroprene latex composition can be controlled (1) by use of a chain transfer agent and by the amount used, (2) by polymerization temperature and especially (3) by control of the polymerization rate.

[0017] First, there is no particular limitation on the kind of chain transfer agent used as long as it is one generally used for manufacturing of chloroprene polymers. Widely known chain transfer agents, for example, long chain alkyl

mercaptans such as n-dodecyl mercaptan and tert-dodecyl mercaptan, dialkyl xanthogen disulfides such as diisopropyl xanthogen disulfide and diethyl xanthogen disulfide, and iodoform can be used.

[0018] Second, a polymerization temperature within the range of 0-55 °C is preferable for polymerization control. Also, a polymerization temperature of 30-50 °C is preferable in order to carry out the polymerization reaction more smoothly and safely.

[0019] Furthermore, the final polymerization rate is preferably 80 mass% or more, and more preferably 90 mass% or more.

[0020] In the present invention, the solid content concentration of the polychloroprene latex composition is preferably in the range of 40-65 mass%, more preferably 45-60 mass percent. Making the solid content concentration of the latex comparatively high gives it a fast drying speed and a better initial adhesiveness. Also, although the solid content concentration can be adjusted by comparing the amounts of

monomer and water during polymerization, the latex composition can also be concentrated and adjusted after polymerization.

[0021] The chloroprene polymer of the present invention is acidic and unstable immediately after polymerization, and therefore its pH must be adjusted to 6-9. The pH is preferably 6.5-8.5. If the pH is less than 6 and the polymer is stored for a long time, changes in properties such as coagulation and separation will occur. Also, an alkaline solution having a pH exceeding 9 is undesirable for handling.

[0022] As a pH modifier of the present invention, it is preferable to include 0.1 mass parts, preferably 0.3 mass parts or more, of a salt of a weak acid, such as sodium carbonate, potassium carbonate, trisodium phosphate, disodium hydrogenphosphate, tripotassium phosphate, dipotassium hydrogen phosphate, tripotassium citrate, dipotassium hydrogen citrate, sodium acetate, potassium acetate and sodium tetraborate with respect to 100 mass parts of chloroprene. A salt of a weak acid is necessary to increase

the buffering performance of the polychloroprene latex composition, and if the amount of the salt is less than 0.1 mass parts, pH deterioration during storage cannot be controlled. If only these salts of weak acids are used, alkaline substances such as sodium hydroxide, potassium hydroxide and diethanolamine can be used together optionally when the pH of the polychloroprene latex is less than 6.

[0023] There is no particular limitation on which method is used for adding pH modifier agent in the present invention, and pH modifier powder can be added directly or added after being diluted in water at any ratio.

[0024] As a radical scavenger of the present invention, a polymerization inhibitor such as thio diphenylamine, hydroquinone, p-t-butyl catechol, 1,3,5-trihydroxybenzene and hydroquinone methyl ether, and an antioxidant such as 2,6-di-t-butyl-4-methylphenol, 2,2-methylene-bis(6-t-4-methyl phenol), 4,4-butylene-bis(6-t-butyl-3-methyl phenol), ethylene-bis(oxyethylene)bis[3-(5-t-butyl-4-hydroxy-m-tolyl)propionate], octadecyl-3-(3,5-di-t-butyl-4

-hydroxyphenyl) proprionate and pentaerythritol tetrakis [3-(3,5-di-t-butyl-4-hydroxyphenol)propionate] can be considered.

[0025] As a radical scavenger of the present invention, it is preferable to use 0-0.5 mass parts of the aforementioned polymerization inhibitor or 0.1-1.5 mass parts of the aforementioned antioxidant.

/3

If the antioxidant is less than 0.1 mass parts, gelation of the polychloroprene latex composition during storage cannot be controlled.

[0026] There is no particular limitation on which method is used for adding the radical scavenger of the present invention. However, a method of adding a radical scavenger dissolved in chloroprene monomer to a chloroprene polymer and removing the monomer by degassing, or a method of emulsifying a radical scavenger by addition of a surfactant or the like and of adding the radical scavenger to the chloroprene polymer is preferable considering the dispersed condition of the

radical scavenger in the polychloroprene latex composition.

[0027] As a catalyst used for polymerization of the polychloroprene latex of the present invention, an inorganic acid such as potassium persulfate or an organic peroxide such as a ketone peroxide, a peroxyketal, a hydroperoxide, a dialkyl peroxide or a diacyl peroxide can be considered. Use of potassium persulfate as a catalyst is preferable in order to perform stable polymerization. Also, potassium persulfate is preferably used in a 0.1-5 mass% aqueous solution.

[0028] Sodium sulfite, iron(II) oxide, sodium anthraquinone- β -sulfonate, formamidine sulfinic acid, L-ascorbic acid or the like can be added to increase the activity of the catalyst used for the polychloroprene latex polymer of the present invention.

[0029] As a tackifying resin of the present invention, a rosin acid ester resin, a terpene phenol resin, a coumarone-indene resin, an aliphatic hydrocarbon resin, an aromatic hydrocarbon resin and the like can be considered. An emulsion of a terpene phenol resin or rosin acid ester resin is a

preferable tackifying resin for expression of initial adhesive force and water resistance of the adhesive agent composition.

[0030] The addition amount (solid content conversion) of tackifying resin is preferably 10-100 mass parts, particularly preferably 20-70 mass parts, with respect to 100 mass parts by solid content. When the amount is less than 10 mass parts, the initial adhesive force is sometimes inferior, and when 100 mass parts is exceeded, adhesive layer formation is easily inhibited.

[0031] As a metal oxide of the present invention, zinc oxide, titanium oxide, iron oxide and the like can be considered. For improving water resistance of the adhesive agent composition, zinc oxide and titanium oxide are preferable, and use of zinc oxide is especially preferable.

[0032] The addition amount of metal oxide is preferably 0.2-5.0 mass parts, especially preferably 0.5-3.0 mass parts. When the amount is less than 0.2 mass parts, water resistance of the adhesive agent composition is sometimes insufficient,

and when 5.0 mass parts is exceeded, initial adhesive force easily deteriorates.

[0033] For the adhesive agent composition of the present invention, inorganic fillers such as calcium carbonate, silica, talc and clay, plasticizers and softening agents such as dibutyl phthalate and process oil, adhesive agents such as sodium polyacrylate, water-soluble polyurethane and methyl cellulose, surfactants such as polyoxyalkylene alkyl ether, 1:2 mol type aliphatic alkanol amide, 1:1 mol type diethanol amide and polyoxyethylene stearate, various age resistors, ultraviolet absorbers and antioxidants can be blended arbitrarily as needed.

[0034] The adhesive agent composition of the present invention is made by mixing a tackifying resin, a metal oxide and the like, but there is no particular limitation on which mixing apparatus is used, and a widely known apparatus such as a three-one motor, a homogenizer media mill or a colloid mill can be used.

[0035] The polychloroprene latex adhesive agent

obtained by the present invention is suitable as a bonding adhesive agent for identical or different materials such as paper, wood, cloth, hide, leather, rubber, plastic, foam, earthenware, glass or ceramics. Also, regarding application methods, application by a brush, an iron, spray, a roll coater or the like is possible.

[0036]

[Examples of Embodiment]

The present invention will be described concretely by the following examples. However, these examples do not limit the present invention. Also, in the following examples, "part" and "%" are based on mass unless otherwise noted.

[0037] Example 1

Using a reactor having an internal volume of 3 liters, 94 parts water and 3.5 parts polyvinyl alcohol (Unitika/UMR-20H, saponification 79 mol%, polymerization degree 380) were added and dissolved while being heated (60 °C) under a nitrogen stream. This aqueous solution was cooled to near room temperature, and then 99 parts chloroprene monomer, 0.5 parts

methacrylic acid and 0.3 parts octyl mercaptan were added into this solution. The solution was polymerized using sodium sulfite and potassium persulfate as initiators while held at a temperature of 45 °C. The final polymerization rate was 98%.

[0038] Next, after adding 0.5 parts (by solid content conversion) of 10% trisodium phosphate aqueous solution to this polychloroprene latex and adjusting its pH, 3 parts of 20% aqueous solution of 1:2 mol type fatty acid alkanolamide (manufactured by Diamond Shamrock Chemical Company) and 0.5 parts of emulsion of 2,6-di-t-butyl-4-methylphenol (Cellosol H633, manufactured by Chuutou Yushi Company) by solid content conversion were added, and a polychloroprene latex composition was obtained.

[0039] Next, the following measurements were made for this polychloroprene latex.

[Gel Fraction Measurement]

A latex sample was freeze dried and accurately weighed, and its weight was designated "A." The sample was dissolved in toluene (adjusted to 0.6%), and the gel was isolated using

a centrifuge and then a 200 mesh metal mesh. The gel fraction was air dried, dried for 1 hour in a 110 °C atmosphere and accurately weighed, and the weight was designated "B." The gel fraction was calculated according to the following formula.

$$\text{Gel fraction} = B/A \times 100 (\%)$$

/4

The results are shown in Table 1.

[pH Measurement]

A latex sample was adjusted to 20 °C in a constant-temperature water tank and then its pH was measured by a pH meter.

[Storage Stability Test] After a latex sample was left to stand for 2 months at 40 °C in an environmental test chamber set to 40 °C, the pH and gel fraction were measured and the sample was examined to determine whether changes had occurred.

[0040] [Initial Peel Strength Degree]

The adhesive agent composition was adjusted according to the formula shown in Table 1. Next, 300 g (solid content)

/ m² of adhesive agent composition was applied to each of 2 sheets (25×150mm) of canvas, dried for 9 minutes in an 80 ° C atmosphere and allowed to stand for 1 minute at room temperature. Subsequently, the coated surfaces were stuck together and pressed with a hand roller. After the surfaces were pressed for 10 minutes, a tension rate of 200 mm/min and a peel strength of 108 degrees were measured using a tensile tester.

[Conditional Peel Strength]

The adhesive agent composition was adjusted according to the formula shown in Table 1. Next, 300 g (solid content) / m² of adhesive agent composition was applied to each of 2 sheets (25×150mm) of canvas, dried for 9 minutes in a 80 degree C atmosphere and allowed to stand for 1 minute at room temperature. Subsequently, the coated surfaces were stuck together and pressed with a hand roller. After the surfaces were pressed for 7 days, a tension rate of 200 mm/min and a peel strength of 108 degrees were measured using a tensile tester.

[0041] [Water Resistance] An adhesive agent composition was adjusted according to the formula shown in Table 1. Next, an adhesive agent composition of 300g (solid content)/m² was spread by a brush on 2 sheets (25×150mm) of canvas and dried for 9 minutes in an 80 °C atmosphere. After being allowed to stand for 1 minute at room temperature, the coated surfaces were stuck together and pressed with a hand roller. After 7 days of pressing, they were immersed in water for 2 days, and a tension rate of 200 mm/min and a peel strength of 108 degrees were measured using a tensile tester.

[0042] [Example 2] In Example 1, 1.0 part of methacrylic acid and 0.6 parts of 10% sodium carbonate aqueous solution by solid content conversion were used, and polychloroprene latex was prepared as in Example 1. The gel fraction, pH and adhesive physical properties were measured as in Example 1, and the results are shown in Table 1.

[0043] [Example 3] In Example 1, 1.5 parts of methacrylic acid and 0.8 parts of 10% sodium carbonate aqueous solution by solid content conversion were used, and

polychloroprene latex was prepared as in Example 1. The gel fraction, pH and adhesive physical properties were measured as in Example 1, and the results are shown in Table 1.

[0044] [Example 4] In Example 2, 0.38 parts of octyl mercaptan was used, and polychloroprene latex was prepared as in Example 2. The gel fraction, pH and adhesive physical properties were measured as in Example 1, and the results are shown in Table 1.

[0045] [Example 5] In Example 2, 3.0 parts of polyvinyl alcohol was used, and polychloroprene was prepared as in Example 2. The gel fraction, pH and adhesive properties were measured as in Example 1, and the results are shown in Table 1.

[0046] [Example 6] In Example 4, 3.5 parts of Denka Poval B-05 was used as a polyvinyl alcohol, and 0.3 parts of 10% trisodium citrate aqueous solution by solid content conversion, 0.3 parts 20% of diethanolamine, 0.2 parts of diethyl hydroxylamine and 0.3 parts of 2,6-t-butyl-4-methylphenol emulsion by solid content conversion were used,

and polychloroprene was prepared as in Example 4. Additionally, moisture was evaporated under pressure, the polychloroprene was concentrated, and the solid content concentration was adjusted to 55%. The gel fraction, pH and adhesive physical properties were measured as in Example 1, and the results are shown in Table 1.

[0047] [Comparative Example 1] In Example 1, 3.0 parts of methacrylate, 0.6 parts of 10% sodium carbonate by solid content conversion and 0.6 parts of 20% ethanol amine were used, and polychloroprene latex was prepared as in Example 1. The gel fraction, pH and adhesive physical properties were measured as in Example 1, and the results are shown in Table 2.

[0048] [Comparative Example 2] In Example 2, 0.05 parts of octyl mercaptan was used, and polychloroprene latex was prepared as in Example 2. The gel fraction, pH and adhesive physical properties were measured as in Example 1, and the results are shown in Table 2.

[0049] [Comparative Example 3] In Example 2, 0.6 parts

of diethanolamine by solid content conversion was used, polychloroprene latex was prepared as in Example 2, and subsequently the latex was stored under the aforementioned storage stability test conditions. Consequently, the pH deteriorated to 5.4. The gel fraction, pH and adhesive physical properties of the latex before storage were measured as in Example 1 and the result is shown in Table 2. However, since the pH of the latex after storage was lower than the range of the present invention, the latex obviously was unstable and could coagulate easily.

[0050] [Comparative Example 4] In Example 2, polychloroprene latex was prepared as in Example 2 without adding an emulsion of 2,6-t-butyl-4-methylphenol. The gel fraction, pH and adhesive physical properties were measured as in Example 1, and the results are shown in Table 2.

[0051]

[Table 1]

/5

		Exam ple 1	Exam ple 2	Exam ple 3	Exam ple 4	Exam ple 5	Exam ple 6
Latex Formul a	Chloropren e	99.5	99.0	98.5	99.0	99.0	99.0
	Methacryla te	0.5	1.0	1.5	1.0	1.0	1.0
	Octyl mercaptan	0.30	0.30	0.30	0.38	0.30	0.38
	Purified Water	94.0	94.0	94.0	94.0	94.0	94.0
	Polyvinyl alcohol 1)	3.5	3.5	3.5	3.5	3.0	
	Polyvinyl alcohol 2)						3.5
(pH Modifi er)	Sodium carbonate		0.6	0.5	0.6	0.6	
	Tripotassi um phosphate	0.6					
	Tripotassi um citrate						0.3
	Diethanola mine						0.3
(Radic al Scaven ger)	Diethylhyd roxylamine						0.02
	CellosolH6 33 3)	0.5	0.5	0.5	0.5	0.5	0.3
Latex Proper ty	Solid content concentrat ion Wt%	47	47	47	47	47	55

	pH	7.8	7.5	7.2	7.5	7.5	7.8
	Gel fraction mass%	44	45	44	30	45	42
Storage Stability 40°C 2 Months	pH	7.4	7.3	7.0	7.3	7.3	7.6
	Gel fraction mass%	47	49	47	33	48	47
Adhesive Blend Formula	Polychloroprene latex	100	100	100	100	100	100
	Tackifying resin 4)	50	50	50	50	50	50
	Zinc oxide 5)	1.0	1.0	1.0	1.0	1.0	1.0
Adhesion Test	Initial Adhesive Strength N/cm	4.7	4.5	4.7	5.4	4.5	4.9
	Conditional peel strength N/cm	4.8	5.0	5.0	4.9	4.4	5.0
	Water resistance N/cm	4.8	4.7	4.2	4.9	4.1	4.7

[0052] Note 1) PVA; UMR-20H, saponification degree 79

mol%, polymerization degree 380 (manufactured by Unitika Company)

Note 2) PVA; B-05, saponification degree 88 mol%,

polymerization degree 550 (manufactured by Denki Kagaku Kogyo

Kabushiki Kaisha)

Note 3) Cellosol H633:2,6-di-t-butyl-4-methylphenol

emulsion (manufactured by Chuuto Yushi Company), addition
amount by solid content conversion

Note 4) Terpene-denatured phenol resin emulsion; Tamanol
E-100 (manufactured by Arakawa Chemical Industries, Ltd.)

Note 5) Zinc oxide emulsion (manufactured by Osaki Industry
Co., Ltd.), Addition amount by solid content conversion.

[0053]

[Table 2]

/6

		Comparative Example 1	Comparative Example 2	Comparative Example 3	Comparative Example 4
Latex Formula	Chloroprene	97.0	99.0	99.0	99.0
	Methacrylate	3.0	1.0	1.0	1.0
	Octyl Mercaptan	0.30	0.05	0.30	0.30
	Purified Water	94.0	94.0	94.0	94.0
	Polyvinyl Alcohol	3.5	3.5	3.5	3.5
	Polyvinyl Alcohol				
(pH Modifier)	Sodium Carbonate	0.6	0.6		0.6
	Diethanol amine	0.6		0.6	
(Radical Scavenger)	Diethylhydroxylamine				
	CellosolH 633	0.5	0.5	0.5	
Latex Property	Solid Content Concentration Mass%	47	47	47	47
	pH	7.1	7.4	7.5	7.5
	Gel fraction	45	80	45	45

	Mass%				
Storage	pH	5.9	7.0	5.4	7.3
Stability	Gel	49	84	49	73
40°C	fraction				
2	Mass%				
Months					
Adhesive Blend	Polychloroprene Latex	100	100	100	100
Formula	Tackifying Resin	50	50	50	50
	Zinc Oxide	1.0	1.0	1.0	1.0
Adhesion Test	Initial Adhesive Strength N/cm	4.5	2.0	4.6	2.2
	Conditional Peel Strength N/cm	4.5	3.9	4.9	4.9
	Water Resistance N/cm	0.2	0.4	4.6	0.8

[0054]

[Effects of the Invention]

Comparison of the above Examples and Comparative

Examples clearly shows that the polychloroprene latex of the present invention has excellent storage stability, initial adhesive force and water resistance, and that a polychloroprene

latex composition particularly suitable as an adhesive agent for paper materials, synthetic resins, copper plates and wood such as particle board, and a manufacturing method thereof, can be provided.